

### REMARKS

Initially, Applicants wish to thank the Examiner for the courtesies extended during the phone interview conducted on May 27, 2004 in regards to the above referenced application. The interview included a general discussion of the invention and the references cited, and how the references of record do not disclose, teach or suggest Applicants' drum shredder for reducing material as a whole comprising a housing; a tapered cutting drum rotatably mounted within the housing, the tapered cutting drum having a cross-section with an outer diameter that is smaller than an outer diameter of another cross-section of said drum; at least one cutting implement disposed about an outer surface of the tapered cutting drum; an anvil adjacent to the cutting drum; a drive connected to the tapered cutting drum; and a bellyband that partially wraps the tapered cutting drum. The Examiner agreed that Hilgarth did not teach an essentially solid drum surface. The Examiner also agree that Morey's design required chip acceleration while Hilgarth's cutting head, because of the pass through windows, did not provide for chip acceleration.

Claims 1-3, 5, 9-16, 19-27 remain in the application. Claim 8 has been canceled without prejudice and claims 1, 3, 9, 24 have been amended to place the present case in better condition for allowance or for purposes of appeal. Claim 3 has been drafted in independent form and new claim 27 has been added as dependant on claim 3. Support for claim 27 can be found in the specification.

The Applicants have carefully reviewed the above-identified Office Action. The Applicants contend that, by the present Amendment, all bases of objection and rejection have been traversed and overcome. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections.

### THE REFERENCES

Morey (5,005,620) teaches a drum type wood chipper having a cylindrical drum (see col. 3, lines 47-49) with pockets for carrying, accelerating and discharging chips.

Hilgarth (5,836,528) teaches a small brush chipper having a cutting drum comprising a cantilevered frame with pass through windows and a smooth inner-side that flares to an opening at one end to allow chips to passively drop into a hopper.

### THE REJECTIONS

In the office action claim 8 is objected to as presenting new matter.

In the office action claim 5 and 24 are rejected under 35 U.S. C. 112, second paragraph, as being indefinite.

In the Office Action Claims 1, 2, 8-16, 19-23 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Morey (5,005,620) in view of Hilgarth (5,836,528).

In the Office Action Claims 3 and 26 are objected to as being dependant upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 3 and 26 have been re-written in independent format including all of the limitations of the base claim and any intervening claims.

**ARGUMENT**

**In the office action claim 8 is objected to as presenting new matter.**

Claim 8 has been canceled without prejudice and the specification has been amended.

**In the office action claim 5 and 24 are rejected under 35 U.S. C. 112, second paragraph, as being indefinite.**

Applicants have amended claim 24 and traverse the rejection as to claim 5 as the tapered drum of claim 5 falls within the description "a cross-section with an outer diameter that is smaller than an outer diameter of another cross-section" of claim 1 and is therefore not indefinite.

**In the Office Action Claims 1, 2, 8-16, 19-23 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Morey (5,005,620) in view of Hilgarth (5,836,528).**

When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined.

Claims 1, 2, 9-16, 19-23 and 25 are not obvious for the reasons set forth herein.

Applicants submit that the Examiner has not made out a prima facie case of obviousness as there is no motivation to combine the references of record to arrive at the Claimed invention as a whole of a drum shredder having a tapered cutting drum with a bellyband partially wrapping the drum.

Impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. See MPEP 2142, 2100-128.

The Examiner has failed to consider the invention as a whole by using impermissible hindsight reasoning and taking unrelated and incompatible pieces from the prior art to make the obviousness rejection when there is not motivation in the reference for doing so. The claimed invention must be considered as a whole.

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). See MPEP 2100-132.

In order to understand why the references of record do not teach the invention as a whole one must first understand what the references teach. Morey (5,005,620) teaches a drum type wood chipper having a cylindrical drum (see col. 3, lines 47-49) with pockets for carrying, accelerating and discharging chips, see col. 1 line 68 – col 2, line 9. In operation as branches are chipped, the chips fall into pockets and are “accelerated to the peripheral speed of the drum”. col. 2, lines 7-8. “The cut chip never changes speed.” Col 2, lines 11-12. Hilgarth (5,836,528) on the other hand teaches a small brush chipper having a cutting drum comprising a cantilevered frame with pass through windows and a “smooth inner surface” that “flares” to an opening at one end to allow chips to passively drop into a hopper. See Fig.1,col. 2, line15-16, col 2, lines 22, and col. 3, lines 47-53. In operation, as small branches are chipped, the chips pass between the blades through the windows to the inside of the drum where the chips are decelerated and follow the slope of

the angled smooth inside frame, see col. 2, lines 22-24 and col. 3, lines 3-4. The chips then fall out the "open end" of the flared frame into a hopper, see col. 2, lines 50-52. Hilgarth therefore uses a passive discharge system based on slope and gravity, while Morey uses pockets to accelerate chips in order to propel them out the transition. Because the references teach opposing and incompatible ways to chip and discharge wood the reference teach away from their combination.

It is also improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed.Cir.1983).

The references teach away for each other and are not combinable. The only reason taught by Hilgarth for using the tapered frame is to permit chips to follow the angle and slope of the inner drum surface for easy discharge out the opening at one end, see col. 3, lines 3 and 4. The passive discharge system fits with Hilgarth's over-all objective of providing a small brush chipper for backyard type operations that is safe but not high volume, e.g. one with a small enclosed hopper, see Fig. 1 and col 2, lines 28-32, . Morey on the other hand is focused on chipping large (tree sized) branches for high volume operations, See Figs. 1-7. As such Morey's system requires an active discharge system, i.e. pockets, bellyband, etc and chip acceleration, see col 5, line 66 - col. 6, line 14. Therefore, because Morey teaches away from using a passive discharge system with a pass through cutting head and Hilgarth requires it, there is no motivation in the art to make Applicants' claimed invention.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art,

and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir.1991). See MPEP Chapter 2143, page 2100-123.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, See MPEP 2100-131.

There is no reasonable expectation of success found in the prior art that the combination as proposed by the Examiner would be functional in a useful way and therefore the invention is not obvious. For example, if the cutting head of Morey is substituted with the cutting head of Hilgarth, chips that would fall into the belly band from the opening or pass through windows would simply sit at the bottom of the belly band and jam the cutting head. Therefore, one would not want to use a belly band with the cutting head of Hilgarth as the combination is otherwise incompatible. Because the combination of using Hilgarth's drum in place of Morey's in Morey's apparatus would not work for its intended use, the claimed invention can not be said to be obvious.

Therefore, because the references teach away from their combining or the combination would not be functional, the claimed invention is patentable over the reference of record.

The prior art reference (or references when combined) must teach or suggest all the claim limitations. The following rejections were improper as they did not teach or suggest all the claim limitations:

With regard to claims 1, 2, 10, 21-23, and 25, applicants traverse the rejection and Examiner's characterization of the references cited above as Hilgarth does not teach the use of a tapered cutting drum having an essentially solid outer surface, because Hilgarth teaches just the opposite, pass through windows, See col. 1, lines 44-45, Fig. 1 item 8, etc.

With regard to claims 9, 19, and 24, applicants traverse the rejection and Examiner's characterization of the references cited above as Hilgarth does not teach the use of a tapered cutting drum having a pocket for carrying reduced material, because Hilgarth teaches just the opposite, pass through windows, See col. 3, line 49-52, col 2, lines 50-52, col. 1, lines 44-45, Fig. 1 item 8, etc.. Furthermore, there is no motivation in the art itself to change the design and function of Hilgarth's cutting drum by adding selected features of Morey while disregarding fundamental teachings of Hilgarth.

With regard to claim 11, Morey does not disclose a transition having a non-linear rear-wall, as the wall is flat and a flat wall would work differently than a non-linear rear wall in regards to chip collisions and discharge efficiency, see page 8, lines 8-20 of Applicants' specification.

With regard to claims 12-15, Morey does not disclose a transition having a non-linear rear-wall as the wall is flat and a flat wall would work differently than a angled or multi-sided, v-shaped, inverted v-shaped wall in regards to chip collisions and discharge efficiency, see page 8, lines 8-20 of Applicants' specification. Morey on the other hand teaches "Consequently, the momentum of the chips need not be changed or redirected during the chipping and expulsion sequence", see col. 6, lines 31-33. Meaning a simple transition was all that is needed with Morey's design as Morey was not concerned with handling multiple chip streams.

With regard to claim 16, Morey does not teach, suggest or disclose a bellyband having a substantially v-shaped or inverted v-shaped wall, but only a simple shaped bellyband, which will operate differently in regards to carrying and discharging chips, see page 8, lines 8-20 of Applicants' specification.

With regard to claim 20, Morey does not teach suggest or disclose a bellyband conforming to the shape of a tapered cutting drum, as such a belly band would have a special shape which can play a substantial role in improved chip discharge, see page 8, lines 8-20 of Applicants' specification.

Therefore, the Applicants respectfully request that the examiner withdraw the rejection as to claims 1, 2, 9-16, 19-23 and 25.

**In the Office Action Claims 3 and 26 are objected to as being dependant upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

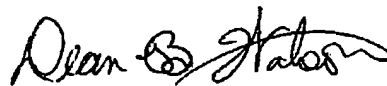
Claims 3 has been written in independent format including all of the limitations of the base claim and any intervening claims. Claims 3 and 23-27 are therefore allowable.

### CONCLUSION

Therefore, applicants submit that because the references are incompatible with each other, the references teach away from their combination, the combination as proposed is inoperable, or the combination of Morey and Hilgarth do not otherwise make the present claims obvious. The Applicants submit that all bases for rejection have been overcome by the present amendment and above arguments, and respectfully request that the application with the present claims 1-3, 5, 9-16 and 19-27 be reconsidered and passed to issuance.

If there are any questions or for purposes of expediting allowance, the Examiner is invited to call the Attorney for Applicants at the number below.

Respectfully submitted,



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